

## The Challenge

As a ne o ner of a compan, ou ne er ant to nd out that the aste aters stem is not operating ithin its design parameters.

That's especiall true hen ou ha e plans to e pand operations b adding larger process tanks and ne processes to  $o_{f}$  er customers, and that is e actl here the ne o ner of one electropolishing compan found themsel es, ho e er.

With a need to get the aste aters stem up to par, the facilit managers contacted their Hubbard-Hall rep for assistance and a solution to their issue.

## Reneving a Wastevater Pretreatment Discharge Permit

When Hubbard-Hall's Aquapure team made the rst site isit, it as ob ious the s stem needed some ork. A treatment plan needed to be determined for the rinses from the electropolishing and passi ation

processes that could ork ithin the e isting 1,000-gallon batch s stem. Pumps, mi ers, and de atering equipment ould need to be replaced. A aste ater pretreatment discharge permit ould need to be rene ed ith the cit 's appro al of the ne treatment plan. While all of this ma seem o er helming, the Aquapure Team had no doubt that this s stem could be up and running in no time.

The rst step as to contact the cit to see if there ould be an changes to the pretreatment discharge permit. With the go-ahead from the cit to

ork ith the pre ious permit's limits, the Aquapure Team could begin orking on the treatabilit stud . A treatabilit stud starts ith determining hat is in the aste ater that needs to be remo ed, hat coagulant and, occulant ork best to remo e the contaminants, here the best pH range to achie e the optimum remo al needs to be, and hat t pe of equipment is needed to complete the treatment.

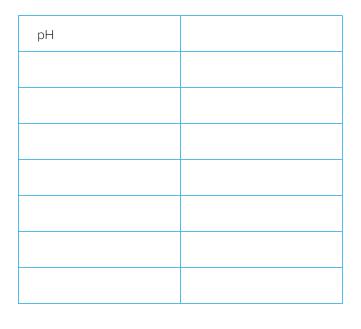
## I dentifying MUtiple Treatment Options

Multiple bench tests ere completed on the aste ater streams. T o treatment options ere identi ed as acceptable options.

Treatment Plan A as to use pH adjustment ith sodium h dro ide and a combination of 2 cla blends, Aquapure Quick Drop 631 and Aquapure Quick Drop 651. The rst step as to adjust pH up to 9 ith the sodium h dro ide. Equal parts of the Aquapure Quick Drop 631 and the Aquapure 651 ere added. Cla blends need 2 things to ork properl , time and rapid mi ing. When bench testing, this translated to creating a orte ithin the beaker, then slo I sprinkling in the cla s and allo ing them to blend for 30minutes to open and absorb the contaminants.

рН	8.8
Total suspended solids	5 mg/L
Turbidit	4 FAU
Lead	0.403 mg/L
Copper	0.152 mg/L
Zinc	0.101 mg/L
Nickel	0.452 mg/L
Chrome	0.639 mg/L

Treatment Plan B as to use a liquid coagulant Aquapure Cal 40, pH adjustment using sodium h dro ide, and a read to use anionic pol mer Aquapure AN Clear. In bench testing, this means adding the Aquapure Cal 40 hile the sample as blending before adjusting the pH to the desired range. This allo s the proper h dro ide bonds to form bet een the coagulant and the metals that need to precipitate out. The pH as adjusted up to 9 ith the sodium h dro ide. This sa the formation of the metal h dro ide salts, other ise kno n as pin, oc. With the addition of the Aquapure AN Clear, a read -to-use anionic, occulant, oc formed immediatel and settled rapidl.



## Providing System Recommendations That Work

While the bench testing as being completed, s stem recommendations ere made. The rst recommendation as for a pump to dose the sodium h dro ide and a pH meter/probe to ensure the pH as correct for treatment. Second, de atering equipment as needed. With space constraints, and a need to not spend a ton of time on the de atering aspect, an inde ing Iter as recommended for de atering. Inde ing Iters allo the sludge to dr using the po er of gra it , draining the ater from the solids. The longer the solids sit in the Iter bed, the drier the become. Upon completion of the